

- F) As the ITU is part of the U.N., this can be a communications link to the U.N. As in my previous experience I have not noted the U.N. to be an effective organization in dealing with such innovative technical matters, I do not consider it important to depend on them at the present time. At some point in the future the U.N. may wish to support this program. A practical way to do so would be for staff operating internationally to do so with U.N. authorization, passports and payment of international expenses.
- G) Critical information regarding the EAS system should be disclosed upon agreement to a non-disclosure agreement, and some means of tracking documents should be employed to ascertain the path of unauthorized disclosures.

PROGRAM RISK MANAGEMENT -----

There are a number of major risks that can be mentioned at present;

- 1) There may be another major disaster approaching the scale of the Indian Ocean tsunami before this program is completed, and there will be serious dissatisfaction with the rate of progress being made. This possibility should be mentioned to the public early on and transparency should help the public trust.
- 2) That this program may be inadequately funded. While much of the engineering standards development needs appropriate funding, it is comparable to developing legislation and is a process that is difficult to hasten without introducing inadequacies that can be serious problems later. It should be realized that this is a really complex project that crosses a large number of organizations' responsibilities. This combined with international politics makes it in a number of ways more difficult than putting a man on the moon. At this time this program has only been personally funded. I decided against copyrighting these plans and proposal as the risk of loss of funds had to be weighed against the risk of the failure to implement this proposal.
- 3) That this program will be excessively funded. This may be interpreted as a signal to find new and creative ways to utilize the budget. However there is no shame in not doing that and in focussing on an effective yet economical approach. Extra funds may be utilized by some states for some political purpose, but the method of doing that need not be via the program management office. Also extra funds can be considered as foreign aid to help poor countries implement their Emergency Alert System or relevant sensor systems. Another aspect of pursuing an efficient approach is that less expensive equipment will be used, which will be more economical to maintain and eventually replace. That makes maintenance funding easier. Also that applies to poorer countries especially, so an expensive solution that is affordable for the U.S. is much less likely to be affordable to the majority of the world. At the present time, the Senate is authorizing \$200M. I would advance the argument that this amount of money for this purpose has not been available in the past and therefore should not be expected again in the foreseeable future, and therefore should be utilized wisely.
- 4) I have incorporated some aspects of fast tracking by in some cases bypassing the ITU. There is a risk to this in that there is no guarantee that the ITU will standardize the WEAS proposal without making changes that are assumed not to be made. The most significant of these is likely to be the acceptance of the national and area coding scheme developed at the beginning. This is further discussed under Execution.
- 5) That relevant risks may not be identified, or if identified, may not be adequately considered and discussed.
- 6) That this program will not be successfully implemented. To avoid this, project risk management shall be applied. The cost to the world of this program not being successful can be more great losses of lives. So the best management methods should be applied with all stakeholders appropriately involved.

This program may be defined and executed to the satisfaction of the Federal Government and its departments and agencies, the State Governments and their departments and agencies, the Regional and Local Governments and their departments and agencies, the broadcasters, ISPs, cellphone and pager vendors and other private companies and organizations. However it may

not still be to the satisfaction of the publics. I use the plural because society is not monolithic. There are different cultural groups and others like people with disabilities. A market research and public information/education component is relevant and should be appropriate to the needs. As an example of a failure, let us consider caller ID.

Caller ID actually works technically, except that mine does not work to identify a second caller. However when I complain to the phone company that I am getting unidentified calls that I cannot tell whether they are coming from Texas, Ontario or Puerto Rico, let alone which city, they say that they can only give me the information they receive. Sometimes the state is identified, so it is possible to implement this. Also when I receive calls from outside of country code 1, they show up as New Jersey numbers sometimes. They should identify the country of origin. So from the public perspective, it is seriously deficient, but the phone companies have no incentive to improve it as they are collecting their payments for it. This sort of deficiency should not be acceptable for the EAS system because lives are at stake, not just an inconvenience.

To address problems, communication of the problem needs to take place. An example of a communication failure is that when I was sending this proposal to the relevant Emergency Management persons, in one state they refused to accept this on the grounds that such correspondence should come from the FCC. This is not unreasonable as there is also the aspect of authorization in this subject. Those who did receive this are responsible for their response, or lack of it. Of course I cannot take the "fire and forget" approach either.

PROGRAM MANAGEMENT; Because this includes multiple engineering standards to be developed, and has multiple rather independent deliverables, I am calling this a program. The Project Management Institute is currently defining the standard definition of what a program is. Many of the tasks in this program can be considered projects. An activity on node network diagram (sometimes incorrectly called a PERT chart) has been developed, but in the draft version only the minority of the durations (as months) have been entered with relevant expert advice. Also for the standards development, an OSI 7 layer protocol diagram breakdown has been developed to explain the functional relationships of the standards to be developed. In reality some desirable changes can be realized later for otherwise previously completed tasks. Integrated change management shall handle these.

IMPLEMENTATION; It would be helpful if the project manager for this had experience in the Emergency Alert System, analog and digital PAL & NTSC television, video compression, internet, analog & digital telephony with ITU-T standard systems, product design, systems integration, fiber & satellite & microwave & copper transmission, disaster recovery, quality management, and have documentation and communications skills. This document is an introductory one, and is basically a scope statement and draft document for a full project plan. With authorization, there will be the incentive for others to respond to these planning questions and so make a more accurate and complete plan. The best project management methodologies such as OPM3 (Organization Project Management Maturity Model) shall be used.

PROJECT FINANCE -----

In the Senate passed recently was the Digital Television Transition and Public Safety Act. In this there are three items of interest.

- 1) A fund to improve the interoperability of radio and other communications systems of the official organizations responding to disasters. This amount is \$1,000 M. While this is valuable, it is not expected to be applicable to this program.
- 2) An amount of \$50 M for improved tsunami detection and alarms. As I understand it, this is an amount requested by NOAA and as the oceans of the world are vast, this may not be an adequate amount of money to provide satisfactory coverage. However it is a major improvement over the present state of affairs and more can be sought by them as it can be justified.
- 3) An amount of \$200 M to improve the Emergency Alert System. As I hope the readers of this document are aware by now, there is a very considerable amount of work to be done to develop standards for all these systems to interoperate. Also equipment prototypes need conformance and interoperability testing. This requires testing by an independent organization and testing capability by the project management. The standards development phase and testing capability should cost less than 1% of the 200 M. If the U.S. is delivered a quite satisfactory solution as a result of the planning and standardization for an amount considerably less than \$200 M, then the balance could be earmarked as applicable to foreign aid for EAS for poor countries. The application of this to all countries should be monitored for progress and effectiveness. The application of this system worldwide should result in significantly less money and aid being needed for disasters from the U.S. Countries that are not making satisfactory progress in the implementation of this system may be informed that a consequence of this may there be a reduction of foreign aid being provided by the U.S., especially for disaster relief. So the governments of these countries are ultimately accountable to their citizens for their actions. Because this will take years to implement, it would be most appropriate if the unspent portion of this funding were held in trust rather than requiring renewed funding each financial year.

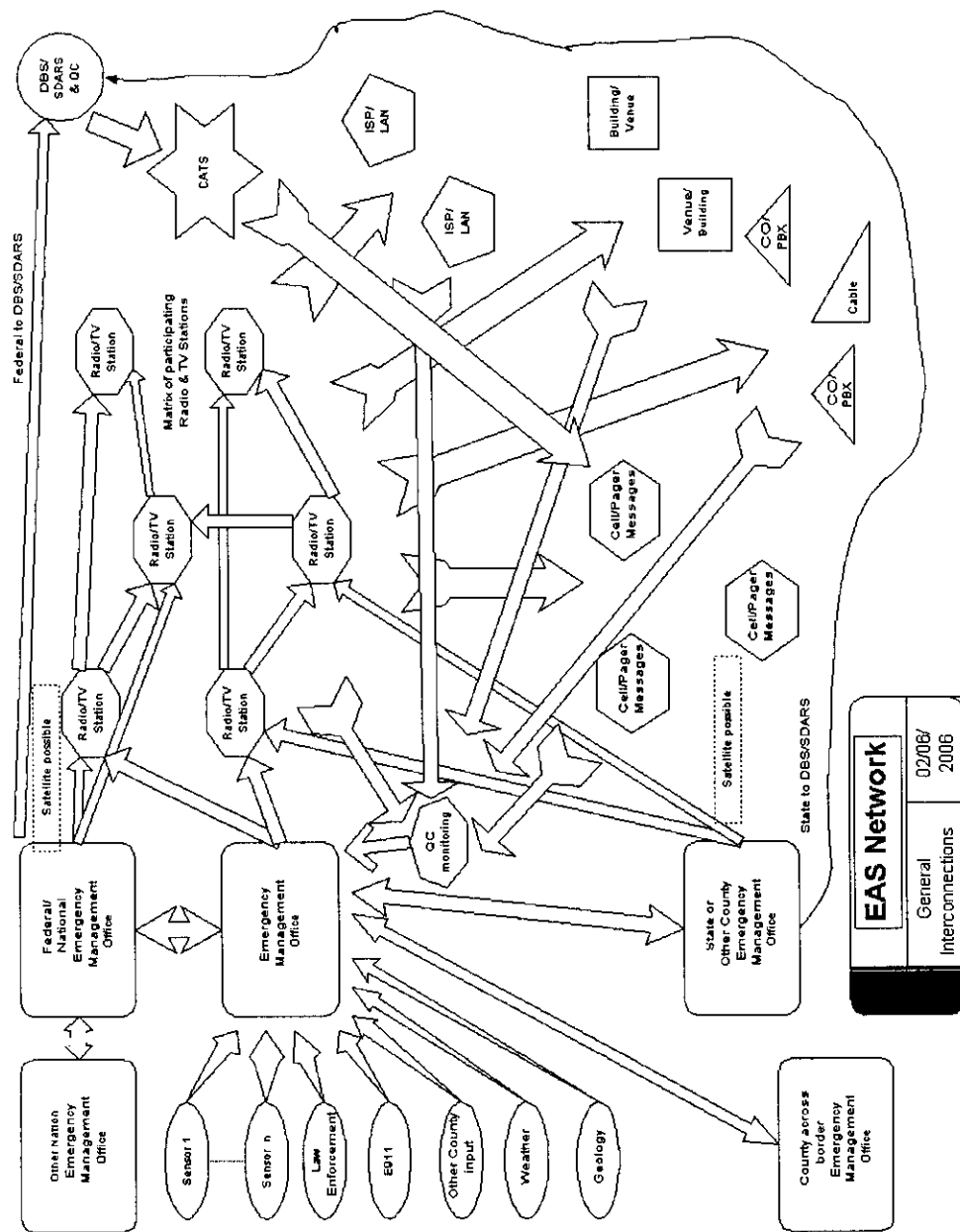
Whether the cost of the equipment is to be paid for by the owner of the facility where it is installed, or some subsidy, is not determined. With the extensions proposed, the number of ISP local offices, telco CO (central office or exchanges), cellphone message routing offices are currently unknown. This is a significant number and cost. The Federal finance should be applied to improvements in the Federal and State Emergency Management Office facilities. With the extensions proposed, there would be a significant increase in the monitoring capabilities to ensure satisfactory operation.

SYSTEM DESIGN -----

To describe the design of the system is simplest when considered as a protocol stack. The internet operates based on the TCP/IP protocol stack. A protocol stack diagram is at WEAS-OSI.XLS, on the next page. Also a general diagram of forms of interconnection follows.

Gateway to >	Broadcast TV	Internet	Cable TV	Cellphone/Pager	Broadcast Radio	Broadcast radio digital	DBS TV	DBS radio	Telephones
Protocol layer					analog			or SDARS	
Application	Crawl & audio Override	Crawl & audio override by OS	Crawl & audio override by STB	Text display optional audio override	Audio override	Text display audio override	Crawl & audio override by STB	Text display audio override	Dial tone override
Presentation (decryption?)	ASCII or Unicode to CG	2 IP ports	IP or PIDS	SMS gateway CATS example	Audio override	ETSI	PIDS	IP or PIDS	and ringing override. CO/CX
Session	PPW/CAP	PPW/CAP	PPW/CAP	PPW/CAP	PPW/CAP	PPW/CAP	PPW/CAP	PPW/CAP	PPW/CAP
Transport (FEC?)	SMPTE	IETF	DOCSIS	ITU/ETSI & others	ITU/EBU	DAB (DRM, HD radio)	SMPTE, other	Sirius, XM, ITU	ITU/Bellcore
Network	PPW	IETF	DOCSIS	ITU/ETSI & others	ITU/EBU	DAB (DRM, HD radio)	SMPTE, other	Sirius, XM, ITU	ITU/Bellcore
Data Link	PPW	IETF	DOCSIS	ITU/ETSI & others	ITU/EBU	DAB (DRM, HD radio)	SMPTE, other	Sirius, XM, ITU	ITU/Bellcore
Physical	PPW	IETF	DOCSIS	ITU/ETSI & others	ITU/EBU	DAB (DRM, HD radio)	SMPTE, other	Sirius, XM, ITU	ITU/Bellcore
Fire Alarm dry contact input to WEAS		Building fire alarm output NC (or NO)	Building fire alarm output NC (or NO)				Building output NC (or NO) where appropriate (hotel)		Building output NC (or NO) where appropriate. PBX

WEAS-OSI.XLS



EXECUTION -----

As disasters are costing many lives and a lot of money, it is certainly desirable to reduce this as much as practicable. In this proposal I have incorporated some aspects of fast tracking by in some cases bypassing the ITU. There is a risk to this in that there is no guarantee that the ITU will standardize the WEAS proposal without making changes that are assumed not to be made. The most significant of these is likely to be the acceptance of the national and area coding scheme developed at the beginning. Canada and Thailand have expressed interest in implementing EAS in their countries. This means implementing country coding and then asking the ITU to accept these as part of the standard. In practice, this has probably been done before, but I cannot convey a decision of the ITU before the fact. At the most, I can ask the ITU to accept decisions made by countries already. If the ITU requests a different implementation by defining the standard differently, then that would mean implementing a software upgrade in all affected equipment at the same time.

This type of fast tracking I am calling US-EAS implementation in other countries, with adaption. If this is proceeded with by other countries, all I can do is to explain the situation as above. The benefit of this is that EAS will not only be planned for but also implemented sooner in those countries than I have noted on the activity diagram. It will be limited to being a terrestrial broadcast only solution as the U.S. presently has. However that is much better than what is presently in place. The extensions can be implemented when they are available. Such fast tracked implementations may provide disaster mitigation results to encourage other countries.

The path of Leadership Development and National Plans Development is a considerable administrative, educational, and sometimes legislative, effort. This can proceed rather independently of the standards development and should be pursued as quickly as reasonable. Then people will be better educated and Emergency Management Offices more prepared for equipment delivery. Once standards are defined and software written accordingly, electronics production lines can manufacture the world supply of equipment in a short time frame. It will take longer for suitably equipped engineers and technicians to install it. Education and legislation is important for the management of the various private businesses and corporations. If anyone questions the need for this, I suggest they read my essay "My Difficulties Implementing EAS", available on request.

CONCLUSION -----

One hypothetical question I was asked was "Could this have helped during 9-11?". My answer was that EAS was not activated during 9-11. This may have been because New York City had to evacuate their Emergency Management Office. I was there on the ground that day and I observed many people saying that their cellphones did not work. I expect that this was primarily due to network congestion which is like a traffic jam, rather than actual damage to the cellphone network. However my proposal is that EAS messages would be delivered in a broadcast mode to everyone, rather than as point to point phone calls. So the EAS messages would still be delivered and help the emergency. One message to deliver is to request people to avoid using their phones, cellphones, and the internet unless they are making essential calls. This is to reduce network congestion.

As I do not have an analysis of the situation regarding EAS in the New Orleans flood, I cannot comment much other than to say that if there were EAS messages delivered by other means as well as terrestrial broadcasters, there may have been more people evacuated sooner. Broadcasters there were having problems also. A Spanish language broadcaster was off the air before Katrina struck, and this deprived a significant population of Spanish-only speakers from EAS messages.

This document is primarily written by Frank W. Bell and is done so without authorization or funding. So it is less than a skunk works project at present. I have however received considerable encouragement and statements of support as noted in the document WEAS responses.doc. While I have not received any funds for this, a representative of one country asked if it would be helpful if there were some funding. I said that I am not seeking any funding from another country as I am expecting that this would be resolved here. Also to do so would have made me an agent on behalf of another country, which is probably not appropriate in the future.

As this program is not even initiated yet at an official level, this document is definitely a work in progress. The planning and standards development phase are expected to result in a number of revisions, so this can be considered a work in progress. Also technology is advancing, so in a sense we have a moving target.

Acronyms are in a file ACRO, available on request. It is not small and the FIND or grep commands can be used.

So far my greatest critics were Baps, the Hindu Association who refuse to discuss this subject, and a TV news network anchor who said that "That would be too logical" as a response to the Asian tsunami.

I wish to acknowledge the support of the N.Y. State Labor Department, the Passaic Workforce Development Center, Rev. Cory Hartman, a Baptist minister who was encouraging and wrote a better cover letter, Dr. Frank Kaufman, a religious consultant who sent some emails recently, and my wife Essie L. Bell and my two children.

COMMENT TO FCC ON EAS NOTICE OF PROPOSED RULEMAKING

FCC EB DOCKET 04-296

The major improvements proposed in this rulemaking is that DBS TV and Satellite Radio (SDARS) systems are expected to carry national level EAS messages, and that multilingual capabilities are recognized as desirable. There is mention of extensions in the direction that I have indicated in my proposal, but nothing concrete at this time. As channel switching is not expected of set top boxes, it appears that DirecTV and Echostar are to be keying the crawl and overriding the audio as is done by terrestrial broadcasters.

As the FCC is basically a technical regulatory government agency, this is an important legislative component to ensure that legal steps are taken. This legislation backed rulemaking can be a model for legislation to be implemented in other countries. However to pioneer the forward movement of the technology, this is rather the realm of engineering and project management.

The crucial role of the technology is not directly addressed in this document. For example video compression is mentioned once, and MPEG not at all. However to recognize that MPEG-2 does not provide any means to superimpose video such as EAS crawls and is almost the sole means of delivering DBS, is to understand the basic limitation currently to providing state and local EAS messages such as snow school closings for example. MPEG-4AVC and VC1 both promise to remove a major hurdle to this implementation. As they are also more efficient in their compression, this is an economic incentive to migrate to them for example for HDTV services. SDARS is also a compression technology for audio. The other large hurdle would be for set top boxes to monitor the EAS data and audio and key the text and override the audio when the messages are for that particular location. Mobile applications such as car radios with SDARS have an additional problem of the equipment being aware of its' location. If GPS is included in the package, that will then leave the problem of location translation as EAS does not normally include latitude, longitude and radius or rectangle or polygon data. This inclusion of coordinates is a question to consider however.

At the core of the technical documentation for these new technologies are engineering standards as developed by ISO (International Standards Organization) or ANSI (American National Standards Institute) approved standards organizations. This includes the IESG (Internet Engineering Standards Group, within IETF), SMPTE (Society of Motion Picture & Television Engineers), Cablelabs, CEA (Consumer Electronics Association) and many others. However this does not include the FCC or SBE (Society of Broadcast Engineers), which together have developed EAS. So EAS is in the realm of U.S. Government specifications along with others like MIL-SPEC, except that CAP is now an OASIS standard. However is the conceptual understanding of EAS based on making a digital equivalent of the analog system? That approach is rather dated since there are now being deployed MPEG splicers, and DirecTV has just announced that in a few years they will convert their STBs to MPEG-4AVC, which can also decode MPEG-2. So now there needs to be a standard developed that is relevant in that time frame.

So the problem is that in order to accomplish the results beyond this rulemaking as is possible with standards development activity, the crucial importance of this process and the role of project/program management in the PMI (Project Management Institute, another standards organization) sense needs to be understood. This may well be understood in the FCC, but it is not obvious in the EAS NPRM.

My proposal is that the results desired by the FCC and many others for EAS can be accomplished by program managed standards development activity. In project management terms, the FCC and SBE are major stakeholders. The U.S. Government is anticipated to provide finance and political clout. In a corporate program environment, the program manager is ineffective if the management is not behind the program. The same applies here. However, as I have found, there is serious interest and support for this beyond the U.S. Government. This is noted on the page on WEAS responses. Has the FCC considered the CATS (City Alert Texting System) now being deployed in the U.K.? Are there lessons to be learned from the Japanese experience with their emergency warning system? Emergency managers in Alaska are interested in linkage with the Japanese system, but is this recognized by the FCC?

As long as there are lawyers arguing in courts there will need to be detailed legislation such as the FCC rules. However in part what is being attempted is to accomplish project management by lawyers, or at least has the appearance of this. If this is going to succeed in reaching its full potential, it can only do so by being done properly in all respects, not just some of them. The role of FCC rules is more readily accepted by others if it is perceived as that of motivating the stragglers to keep up with the herd, and reason to adequately document that the correct actions have been taken. This includes documentation of the signal path in which EAS equipment is installed, and that records are made of FCC compliance by appropriate test equipment. While chief engineers may like to have their facility drawings up to date, and appropriate test equipment available for this digital technology, the combination of frugal company ownership and power grabbing by IT management can deny them the appropriate tools. IT managers can even remove EAS from service and be unaware of the consequences of their actions.

Already there are efforts by Canada and Thailand to implement EAS. This is not mentioned. Also there are many disasters in other countries that have relief provided by the U.S. These two aspects point toward the desirability of a world system from a political perspective as well as the standards development aspect I have already pointed out. Together this goes beyond the FCC and even the U.S. Government. However there are crucial roles for both if it can be accepted that EAS can be an important contribution to world peace and security as well as that of the U.S. World peace and security centered on the U.S. will be to the advantage of U.S. security. I have seriously supported U.S. security in relation to SDI, and I have no intention of changing that with EAS.

The foreign affairs concerning the FCC are normally related to the ITU, Canada and Mexico. However there is no mention of EAS in relation to them. Major foreign disasters are of concern not only to the general public, but more specifically to the International and Foreign Relations Committees, the State Department, and on occasion the President. Whether this is a consideration within the FCC is unknown, but it is not apparent in the document. The international prestige of the U.S. is probably not a concern of the FCC. However, if this program of EAS improvements is

well implemented, there is the potential for this to have very positive foreign diplomatic benefits for the U.S. These can be of benefit in many ways, including leverage to make improvements in relation to the U.N. for example. The stakes of this are higher than most people realize.

World Emergency Alert System proposed plan outline responses.

Oppose Disagree Refuse Appreciate Support Endorse
to say or Interested

ACLC (Archbishop Stallings verbal) USA	----	----	----	----	----	----	Y
American Radio Relay League USA							Y
Assembly of God USA	-----	----	----	----	----	Y	
Australia							Y
Baha'i of USA	----	----	----	----	----	----	Y
Benny Hinn Ministries USA					Y		
Bill & Melinda Gates Foundation USA (statement)	----	----	----	----	----	Y	
Canada							Y
Catholic, Paterson Diocese NJ	----	----	----	----	----	Y	
City Alert Texting System UK							Y
Congressman Joe Wilson SC	----	----	----	----	----	Y	
Demoss Associates (USA PR company)						Y	
Hindu Association Baps NJ	----	----	----	N			
International Association of Emergency Managers (verbal) USA				Y			
International Society of Krishna Consciousness USA	----	----	----	----	----	Y	
New Zealand					Y		
Orthodox Judaism USA	----	----	----	----	Y		
Papua New Guinea					Y		
Presbyterian Church USA (verbal)-	----	----	----	----	Y		
Qualcomm					Y		
Red Cross USA	----	----	----	----	Y		
Senator John McCain AZ					Y		
Southern Baptist/North American Mission Board USA	----				Y		
Sweden					Y		
Thailand (vendor & ADPC information)-	-----	----	----	----	Y		
Tibetan Buddhism, His Holiness the Dalai Lama							Y

Support means supporting the proposal goals. Endorse means endorsing the proposal technical plan. Those who have yet to respond are not listed.

Summary of responses;

Oppose	0
Disagree -----	0
Refuse to say	1 (counted as a no)
Appreciate or Interested -----	13
Support	8
Endorse technical plan -----	4

From;

Countries	7
Religious groups -----	11
Community/National/other groups	6
Congressmen or Senators -----	2

WORLD EMERGENCY ALERT SYSTEM

PROGRESS REPORT 2006-01-19

Frank.W.Bell PMP CBTE CBNT

Since starting the first phase which was that of promoting and gathering support for this proposal, there has been a significant progress in some important areas. Firstly the response has been decidedly one of interest and support. The responses are summarized as follows; Support means supporting the proposal goals. Endorse means endorsing the proposal technical plan. Those who have yet to respond are not listed.

Summary of responses;

Oppose	0
Disagree	0
Refuse to say	1 (counted as a no)
Appreciate or Interested	13
Support	7
Endorse technical plan	3

From;

Countries	7
Religious groups	11
Community/National/other groups	4
Congressmen or Senators	2

Senator John McCain of Arizona is on the Commerce Committee and has taken a considerable interest in matters which relate to telecommunications and public safety. This is now passed in the Senate and is awaiting the decision of the House.

This act has several components

- a) The shutting off of analog (NTSC) TV and providing assistance to accomplish that.
- b) The funding of interoperability for first responders communications in disaster situations. This was initially prompted by the 9-11 Commission Report, but strongly reinforced by the Katrina disaster, primarily concerning New Orleans.
- c) The funding of \$250M for improved emergency alert methods. \$50M is for sensing and warning coastal areas in case of tsunamis. This is an amount of funds that NOAA has asked for and if they receive all of that amount, that would be very helpful for those sensors to be installed as widely as possible in the world. The balance of \$200M is attracting various proposals. This approach I am proposing is focussing on standards development. That stage should cost less than 1% of that amount. While it will take some time to implement, the result will be that EAS messages will be delivered via the electronics systems that people are normally using. This will require a minimal amount of new equipment. The cost of the installation stage should be less than the cost of the present EAS system. As I do not have this figure available, I am supposing that it would be less than \$100M. If this is the case, I suggest that the \$100M balance be utilized as a special form of foreign aid for poor countries to fund their EAS equipment.

A television engineer I have worked with, including during the 9-11 recovery, is Fred Baumgartner. I was not aware that he was involved with the early development of the EAS system. He pointed out to me that a number of things that I was pointing out were incorporated in the original design. They were not made apparent in the subsequent implementation. These include provision for a worldwide (and beyond) addressing scheme. Also included is the provision for using multiple languages, as the basic codes are language independent. Currently I do not have the details of that, but in general it is best if there is no need to reinvent the wheel.

Also I have been in communication with engineers of the City Alert Texting System (CATS) and that is the correct spelling. This is becoming more widely installed in the U.K. There are efforts

being made to expand that elsewhere. While it is a subscription service, it has some useful capabilities that are complementary to the EAS approach. They are sending more information on their system. Their engineer, Nick Sellers wrote "We have now had a look at your papers and think that your idea of a world system is to be applauded. We would like to be involved and wonder how we can help you move this forward."

I have established contact with two satellite radio vendors, XM and Sirius. They are considering the implications of this for their businesses. Also I have established contact with the International Association of Emergency Managers.

As the stakeholders in this proposed program are really about everyone on the planet, I am continuing to establish contacts with various countries and organizations. There are some constructive comments being made which are helpful in moving forward.

The Project Management Institute has taken an active role to develop improved methodologies to disaster responses. Also there is some consideration to start addressing disaster mitigation. This can be helpful when it begins. As an ANSI approved standards organization, it can define terminology and methods. While a project is a defined term, a program, which can incorporate a number of projects, is in process of being defined. At present I am using this in terms of the dictionary definition. As this proposal incorporates a significant amount of standards development, has multiple rather independent deliverables, and will result in countries and companies performing a number of projects, I suggest that this is best called a program.

A standards committee I am a member of is the Compression Committee in the Society of Motion Picture and Television Engineers. This committee is in the final stages of defining the VC1 standard. This is a successor to MPEG-2 which is the basis of current broadcast and satellite digital TV. A similar standard to VC1 is MPEG-4+H.264 (also known as MPEG-4AVC). However there is not presently defined a means of transmitting EAS data in any of these systems. This is amongst the work that needs to be done, and it is difficult to amend a standard once it is approved as complete. Because both MPEG-4AVC and VC1 offer about twice the efficiency of compression of audio and video as MPEG-2, there are economic reasons to replace MPEG-2. However this WEAS development work cannot really begin until there is approval and funding.

An EAS equipment manufacturer, TFT, is making progress with implementations of their equipment that would be suitable for Canada and Thailand. If these implementations are ultimately compatible with a world standard system, this would avoid future difficulties.

I have made progress writing the program proposal, including the activity network diagram and the proposed protocol stack of how the different standards operate with each other.

Mr. Charles Rhodes, a television engineer and author is bringing this proposal to the official for EAS at the FCC. I send packages of information to Jerry Whitaker who is a standards manager for the Advanced Television Standards Committee, Microsoft & the Gates Foundation, Scott Bradner of Harvard & the IETF, Mike Schwartz of Cablelabs and this progress report to Jan Skora of Industry Canada who is the Director General responsible for implementing a public warning system for Canada. The program plan is written and has been presented to Congressman Bill Pascrell Jr., my local Congressman and Congressman Joe Wilson who wrote in support, and to the FCC Notice of Proposed Rulemaking on EAS.

Sincerely,

Frank W. Bell

Frank W. BELL

299 Madison Ave. Clifton NJ 07011-3764

(973) 773-4521 (message)

WRNN rntv.com. Regional News Network

8/2004 – 4/2005

- Installed mountaintop microwave digital studio-transmitter links and analog returns
- Acting Chief Engineer, maintained ATSC transmitter, planned 2G transition, tested multipath receivers.

AT&T Transmission of Olympics TV 2004,

2004

- Reception of 4 channels from Greece and transmitting back two at AT&T New York for NBC

TCI/AT&T/Comcast Digital Media Centers (212) 824-4400

9/1998 – 8/2003

- Lead tech at digital multichannel origination and transmission facility with encoders for sat. & fiber Classic Sports and Odyssey master control, Bloomberg feed by Compression Labs on OC3 and Digicipher 1 on satellite to Denver. All now replaced with digital facility & Tandberg TV.
- Documented facility physical drawing & signal flow documentation in VidCAD. Improved reliability of satellite uplink system to minimize rain fades and unreliable tracking, Satcom K2, an end of life satellite on an inclined orbit was used.
- Worked with contractors and inspectors to upgrade diesel generator to meet building code.
- Replaced Digicipher 1 with DC 2 to feed ABC, NBC, CBS & Fox from NYC to DirecTV
- Diagnosed problems with antenna system. .

Promoted to- Lead Technician/Broadcast Engineer

- Installed Oxygen and helped develop DCC, digital content control. With the Systems Group.
- Installed TV Asia master control.
- Certified TV Japan feed with VM700T.
- Pointed uplink to Anik E1, a satellite with no users on.
- Shut down two TV channels (Oxygen & TV Asia) on 9-11 as facility was five blocks south of ground zero. Restarted facility without power and fuel; cleaned and debugged.
- Checked data transmission on DC2 with WINK reported improved methodology including detection of group delay caused BER problems.
- Redrew Systems Group documentation in VidCAD incorporating numerous changes.
- Installed NTV feed through, Moscow to Denver. Installed a multichannel facility alarm system. Replaced DC2 and CLI with Tandberg TV MPEG transmission. Transmission on Accuring (SONET) replacing DS3. Completed Sony BVW-75 course.
- Attended NAB 2002. Developed I2 (internet 2) solution for sports network TV acquisition.

Manhattan Center Studios/Hammerstein Hall

9/94 - 6/98

- Video engineer in production/post
- Installed Manhattan Center Graphics, fiber with ATM and ISDN to ISP.
- Installed offline edit suite (ImMIX Turbocube) and upgraded online DVS8000 edit video suite and animatics cameras, adding DVE and CG.
- Clearcom matrix and BTS router configuration. Repaired PCs incl. motherboard upgrades to Pentium, Windows 95 install, virus removal. Dealt with power quality and grounding issues relating to this two building facility including design of MOVIM (Metal Oxide Varistor with Monitoring) modules, paper available.
- Upgraded Novell network from Arcnet to 10BaseT. Studied digital TV at Tektronix seminars and Charles Poynton (part of SMPTE annual conference). Also Tektronix ISDN faultfinding, Agilent SONET/ATM, Dranetz/BMI power quality analysis and Network Associates computer security. Certified digital VTR maintenance on DVCPRO.

New York 1 News – an AOL Time Warner company News Facility

6/94 – 9/94

- Maintained HVAC, robotic cameras (Radamec-EPO & BTS), facility router (BTS), Hi8 & Betacam-SP ENG and editing equipment and Beta LMS (Library Management System) (Sony).

References available on request

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PTO please.

Frank W. BELL

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- Installed Johnson Controls HVAC computer control network, and documented same in Autocad.
- TV news engineer during primary elections 1994 NYC.

Eastside Audio & Video/Mix – a PostPerfect/Carlton company

1990-94

- Tech in audio post/video

WRIST – an electronics product development company, marine telematics & industrial.

1985-90

- **DESIGNED / MANUFACTURED**; Loran-C receiver. Handheld SBC w/ LCD FPGA keyboard FDD LPT barcode RS232/485 & analog-digital I/O. Multitrack-to-console interfaces for 5 types of multitrack audio recorders record enables, tallies & mode. Pulse amps w/ complementary 300V risetime 150nS floating 30kV. Dual fiber pulse gen. ISA bus. Tech power for large facility incl. rotary UPS & ground isolation. DEVELOPED; 900MHz radio front end w/ helical resonator & 1.5 dB NF silicon & mixer, 90° power splitter & QPSK modulator & various other broadband RF transformers, mixers & filters. ASSISTED 32 bit navigation videoplotter & other marine telematics, TV facility integration.
- **PATENT**; 162112 NZ, a telecommunications-telemetry circuit.
- **BUILT**; Oscilloscope, harmonic distortion analyzer, DMM, low distortion oscillator, RF spectrum analyzer, 450 MHz power amp among other things. Cable color & purchasing databases.
- **INSTALLED OR COMMISSIONED**; TV translators, TV system in 40 floor hotel, ISDN digital audio links, 4 TV channels, SSL consoles, acoustics, LAN, SGI CG department, video edit online, offline & animatics. Fiber & Lemo connectors. Microwave Studio-Transmitter Links. EAS receiver.
- **PLANNING/DOCUMENTATION EXPERIENCE**; CAD experience on Vanguard, Orcad, Cadstar, Powerdraw, Autocad, VidCAD, Visio. Microsoft Project. 30 years long term demand projections, other.
- **MAINTENANCE EXPERIENCE**; HVAC, house sync (incl. encoded subcarrier), large UPS/generator systems, video/audio routers (Pesa, Datatek, BTS/Thomson), debugging electromagnetic susceptibility & interference problems, satellite dish incl. uplink to bird with no carrier. Datacomm links, LMS. Familiar with use of network analyzers, spectrum analyzers (incl. microwave), BERT, T-BERD, waveform/vectorscope (incl. VM700 and 601), digital oscilloscope, logic analyzer, some familiarity w/ protocol analyzers. Worked in both telecom and video transmission rooms. QC feeds diagnosing incorrect setup at remote locations. Computer networks using ping & SNMP. Various pro and broadcast VTR & ATR and other equipment incl. DVE, switchers, DAWs, consoles. BVW75 and DVCPro VTR certified. Odetics, 360 & Mediastream servers. Alamar, Pro-Bel, Crispin automation. Virus removal, computer configuration, alarm trees etc. 6 multichannel TV compression systems (incl. DC2 and Tandberg TV). ITU601 Digital editing and master control. Alamar & Pro-Bel automation. AES, closed captioning, V-chip, CMX & Avid editors, TVs & monitors, also consumer, industrial, agricultural & marine electronics. Training incl. MCSE, Cisco ICRC, ISDN, TV automation, digital video, SSL, Neve, Digicipher2, SONET/ATM. Working on TV facility SCADA system including BMS and SNMP. Promoted ISO9004-2 QC. Industrial automation (electromechanical-hydraulic computer-PLC). Certified Broadcast Television Engineer (CBTE www.sbe.org). Project Management Professional certified (PMP www.pmi.org). Six Sigma Green Belt (QC certification). Certified Broadcast Network Technologist (CBNT sbe.org). ATSC transmitter.
- **DISASTER RECOVERY**; Telecommunications engineering in very earthquake prone volcanic country, international undersea cable terminal, familiar with power quality analysis, lightning-grounding, flooding, solar flare. Member Y2k response team. 9-11 recovery in multichannel TV facility then published "Emergency Experience Notes" in Power Quality magazine website. Proposed EAS be installed in New Zealand. Risk Management.
- **PUBLICATIONS**; Studio Equipment Reliability Availability and Economics. Grounding in a Two Building Teleproduction Facility. Preferred Equipment Specifications. Copies available on request. www.powerquality.com/ar/power_experience_notes_emergencies. U.S. citizen. Member Soc. of Motion Picture & Television Engineers, volunteer for SMPTE conference tech sessions, compression committee.. Fellow Inst. of Diagnostic Engineers (if sub. paid). FCC General Class Radiotelephone Operators License. BSET equiv. VidCAD certified. Class B (bus) driver license. Ham T permit. Studied Linux, Win XP. Made 155 question test for staff training HD boot camp. Ennes Workshop. RF Safety Seminar.

References available on request

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PTO please.